REMARKS

Claims 9, 23, 42, 47, 57 and 64 have been rewritten in independent form to incorporate subject matter indicated by the Examiner to be allowable. Claims 1-66 are pending in the application.

Section 103(a) Rejection:

The Office Action rejected claims 1, 5, 10, 13-14, 16-21, 44-46, 48-51, 54, 58-63 and 65-66 under 35 U.S.C. § 103(a) as being unpatentable over Buckle (U.K. Patent 2,332,288) in view of Wolff (U.S. Patent 6,668,271).

In regard to claim 1, contrary to the Examiner's assertion, Buckle in view of Wolff fails to teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state and storing the data representation language representation of the current computation state of the process. Buckle discloses a method in which "it is possible to transmit *binary files or byte code* between agents. The byte code sent in a message may include byte code of an agent itself. Buckle's agent enabling layer utilizes the CORBA Externalization service to record object and object states (i.e. an agent) as a stream of data" (Buckle, page 38, lines 12-14). Thus, Buckle teaches that the *binary* byte code of an agent may be included in a message from a location L1 to a location L2. Wolff teaches a network appliance system in which agent cards include state information for functionality and which can be mounted in an agency unit (Wolff, Abstract, FIG. 1, column 1, lines 20-29, and column 2, lines 28-36).

In contrast to the Examiner's assertion, Buckle does not teach or suggest storing the data representation language representation of the current computation state of the process. Instead, Buckle teaches that the "agent *code*... is stored locally at ... location L2, so that the *agent can operate* at physical location L2." (Emphasis added, Buckle, col.

39, lines 4-8). The Examiner equates this storing of agent *code* to storing a *representation* of the current computation state of a process. However, applicants point out that Buckle specifically refers to storing the agent *code* and that this storing enables the agent *to operate*. Thus, Buckle cannot be saving a *representation* of the current computation state. Firstly, it is clearly binary code. Secondly, a *representation* of an agent, rather than the actual agent code, would not be able to operate as required by Buckle without further conversion into the agent's actual byte code.

Buckle teaches that the actual byte code of an agent, which is not a data representation language representation, is sent to another location as the content parameter of an ACL message. The Examiner admits that Buckle fails to teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state. The Examiner relies upon Wolff, citing column 2, lines 1-10, column 3, lines 25-45, column 4, lines 25-35, column 5, lines 1-8, and column 6, lines 1-5. The first cited passage (column 2, lines 1-10) generally describes how IP address and URL names are used with the Internet. The other cited passages describe various aspects of how Wolff's agent cards work.

However, the combination of Buckle and Wolff does not suggest Applicants' claimed invention. Wolff's agent cards do not suggest modifying Buckle's CORBA-based agent mobility system. Wolff teaches that agent cards maintain state for their functionality, but can be physically moved from agency unit to agency unit (Wolff, column 3, lines 6-7). In other words, Wolff's system requires physically moving agent cards from one agency unit to another. Buckle, on the other hand, teaches that binary agent code may be sent from one location to another via ACL messages. Wolff's system does not involve, nor is Wolff concerned with transferring state information for a process from one device to another, but instead involves allowing devices, that may contain state information to be moved from one physical location to another physical location, i.e. from one of Wolff's agency units to another. The operation of Wolff's agent card clearly would not apply to the binary agent code transfer in Buckle's system.

Also, Buckle' system requires various mechanisms provided by the CORBA platform. Modifying Buckle to use a representation of the an agent would prevent Buckle's system from being able to use the CORBA platform's externalization service (see, page 38, line 28 – page 39, line 4) on which Buckle relies in order to convert an object into a byte stream and one which Buckle also relies on for re-constructing the byte stream back into an object before storing the reconstituted agent code at location L2. The entire purpose of Buckle's teachings is directed to moving executable code as binary byte code using CORBA. Thus, modifying Buckle in view of Wolff, as suggested by the Examiner, would change the basic principle of Buckle's system. Buckle's system would not work as intended if the a .xml file as in Wolff was transferred instead of the binary byte code. "If a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." (See e.g. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)).

Additionally, the Examiner has failed to provide a proper motivation to combine Buckle and Wolff. The Examiner states, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Buckle and Wolff's system because Wolff's xml would be the well-known language for streaming data in a distributed system and is enable [sic] for interpretation between applications and organizations." However, Wolff's system does not have anything to do with using streaming data to migrate agent's in a distributed system, as taught by Buckle. As noted above, Wolff teaching agent devices that maintain their state information and that can be physically moved from one agency unit to another. One skilled in the art would not be motivated to modify Buckle's system based on Wolff's teaching, as suggested by the Examiner.

Additionally, Wolff teaches away from a software based solution for moving state from one location to another, and thus teaches away from any combination with Buckle. Wolff states, "[s]oftware for transferring state is known, but that requires a software application and then duplicating all of the configuration and data files" (Wolff,

column 3, lines 27-30). Wolff also states that his system's "use of state-contained agent cards makes it much easier for an end user to transfer state from one location to another" and additionally states, " [u]nlike [other] approaches the agency unit/agent card approach described herein allows for specifying the access and processing mechanisms in the same package as the data." (Wolff, column 3, lines 32-35). Thus, Wolff does not provide any suggestion or motivation to modify the system of Buckle.

Furthermore, even if one could combine the teachings of Buckle and Wolff, which Applicants' maintain is improper, the combination would also fails to teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state and storing the data representation language representation of the current computation state of the process. As noted above, Buckle teaches that the byte code of an agent, including objects and object states, may be included in a message for transmission from a location L1 to a location L2, and that the agent code may be stored locally on L2 (to enable operation of the agent). Wolff teaches agent cards that maintain state information and may be physically moved from one agency unit to another. Thus, the combination of Buckle and Wolff results in a system that includes two different methods of agent migration (i.e. the CORBA based method of Buckle and the physical movement of cards of Wolff). Additionally, such a combination would not include storing a data representation language representation of the current computation state of a process.

Therefore, for at least the reasons given above, the rejection of claim 1 is not supported by the prior art and withdrawal thereof is respectfully requested. Similar arguments apply in regard to independent claim 51.

In regard to claim 19, contrary to the Examiner's assertion, the cited art does not teach converting a current computation state of a process into a data representation language representation of the current computation state and sending the data representation language representation of the current computation state of the process to a second device. Instead, Buckle discloses a method in which "it is possible to transmit

binary files or byte code between agents. The byte code sent in a message may include *byte code of an agent* itself. The agent enabling layer utilizes the CORBA Externalization service to record object and object states (i.e. an agent) as a stream of data" (emphasis added, Buckle, page 38, lines 12-14.) Buckle thus teaches that the byte code of an agent, including objects and object states, may be included in a message. Applicants also assert that Buckle teaches the use of ACL messages, which by definition are not **data representation language representations** of the current computation state (see similar remarks above regarding claim 1).

As discussed above regarding claim 1, Wolff teaches a network appliance system in which agent cards include state information for functionality and which can be mounted in an agency unit (Wolff, Abstract, FIG. 1, column 1, lines 20-29, and column 2, lines 28-36).

The Examiner admits that Buckle fails to teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state. Instead, Buckle teaches that the actual byte code of an agent, which is not a data representation language representation, is sent to another location as the content parameter of an ACL message. The Examiner relies upon Wolff, citing column 2, lines 1-10, column 3, lines 25-45, column 4, lines 25-35, column 5, lines 1-8, and column 6, lines 1-5. The first cited passage (column 2, lines 1-10) generally describes how IP address and URL names are used with the Internet. The other cited passages describe various aspects of how Wolff's agent cards work. Wolff teaches a system wherein agent cards may be

However, the Examiner's suggested combination of Buckle and Wolff is improper. Wolff's agent cards do not suggest modifying Buckle's CORBA-based agent mobility system. Wolff teaches that agent cards maintain state for their functionality, but can be moved from agency unit to agency unit (Wolff, column 3, lines 6-7). In other words, Wolff's system requires physically moving agent cards from one agency unit to another. Buckle, on the other hand, teaches that binary agent code may be sent from one

location to another via ACL messages. Wolff's system does not involve, nor is Wolff concerned with transferring state information for a process from one device to another, but instead involves allowing devices, that may contain state information from one physical location to another physical location, i.e. from one of Wolff's agency unit to another. Thus, no state information on Wolff's agent card is transferred to another location, as the binary agent code in Buckle's system.

Also, Buckle' system requires various mechanisms provided by the CORBA platform. Modifying Buckle to use a representation of the an agent would prevent Buckle's system from being able to use the CORBA platform's externalization service (see, page 38, line 28 – page 39, line 4) on which Buckle relies in order to convert an object into a byte stream and one which Buckle also relies on for re-constructing the byte stream back into an object (before storing the reconstituted agent code at location L2. Thus, modifying Buckle in view of Wolff, as suggested by the Examiner, would change the basic principle of Buckle's system. "If a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." (See e.g. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)).

Additionally, the Examiner has failed to provide a proper motivation to combine Buckle and Wolff. The Examiner states, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Buckle and Wolff's system because Wolff's xml would be the well-known language for streaming data in a distributed system and is enable [sic] for interpretation between applications and organizations." However, Wolff's system does not have anything to do with using streaming data to migrate agent's in a distributed system, as taught by Buckle. As noted above, Wolff teaching agent devices that maintain their state information and that can be physically moved from one agency unit to another. One skilled in the art would not be motivated to modify Buckle's system based on Wolff's teaching, as suggested by the Examiner.

Additionally, Wolff teaches away from a software based solution for moving state from one location to another. Wolff states, "[s]oftware for transferring state is known, but that requires a software application and then duplicating all of the configuration and data files" (Wolff, column 3, lines 27-30). Wolff also states that his system's "use of state-contained agent cards makes it much easier for an end user to transfer state from one location to another" and additionally states, " [u]nlike [other] approaches the agency unit/agent card approach described herein allows for specifying the access and processing mechanisms in the same package as the data." (Wolff, column 3, lines 32-35). Thus, Wolff does not provide any suggestion or motivation to modify the system of Buckle.

Furthermore, even if one could combine the teachings of Buckle and Wolff, which Applicants' maintain is improper, the combination would also fails to teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state and storing the data representation language representation of the current computation state of the process. As noted above, Buckle teaches that the byte code of an agent, including objects and object states, may be included in a message for transmission from a location L1 to a location L2, and that the agent code may be stored locally on L2 (to enable operation of the agent). Wolff teaches agent cards that maintain state information and may be physically moved from one agency unit to another. Thus, the combination of Buckle and Wolff results in a system that includes two different methods of agent migration (i.e. the CORBA based method of Buckle and the physical movement of cards of Wolff). Additionally, such a combination would not include storing a data representation language representation of the current computation state of a process.

Therefore, the rejection of claim 19 is not supported by the teachings of the cited art and withdrawal thereof is respectfully requested. Similar arguments apply in regard to independent claims 44 and 61.

The Office Action rejected claims 2-4, 6-8, 27-33, 36-41, 52-53 and 55-56 under 35 U.S.C. § 103(a) as being unpatentable over Buckle in view of Wolff, and further in view of Matsumoto (U.S. Patent 6,763,334),

In regard to claim 27, contrary to the Examiner's assertion, the cited art does not teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state and sending the data representation language representation of the current computation state of the process to a space service for storage. Instead, as discussed above regarding claims 1 and 19, Buckle discloses a method in which "it is possible to transmit *binary files or byte code* between agents. The byte code sent in a message may include byte code of an agent itself. The agent enabling layer utilizes the CORBA Externalization service to record object and object states (i.e. an agent) as a stream of data" (emphasis added, Buckle, page 38, lines 12-14.) Thus, Buckle teaches that the byte code of an agent may be included in a message for transmission from a location L1 to a location L2. Buckle further discloses "the agent is received by a receiving agent at location L2. The agent code, carried by the current parameter is stored locally at the physical resource at location L2, so that the agent *can operate* at physical location L2." (emphasis added, Buckle, page 39, lines 6-8.) Buckle thus teaches that the agent code, and not a data representation language representation of the current computation state, from the message is stored locally on L2 once the message is received on L2. Buckle further teaches the use of content parameters of ACL messages and specifically states that it due to the fact that the content parameter is not restricted in format that allows the transmission of binary files or byte code (Buckle, page 38, lines 10-12). Thus, Buckle is clearly teaching the transfer of binary data (agent code) and not the sending of the data representation language representation of the current computation state of a process.

In contrast to the Examiner's assertion, Buckle fails to teach or suggest a space operable to store documents including data representation language documents in the distributed computing system. The Examiner cites page 39, lines 1-10 where Buckle describes how a CORBA based serialization of an agent may be received by a device,

reconstituted back into actual agent code and stored at location L2. However, Buckle's devices and destinations are not spaces operable to store documents. Instead, Buckle teaches moving agents, which are not documents.

Additionally, Buckle fails to teach or suggest a space service operable to store and retrieve documents to the space for processes in the distributed computing environment, as the Examiner contends. The Examiner again cites page 39, lines 1-10 of Buckle and argues that Buckle's agent can operate at location L2. However, the cited passage and the Examiner's reference to an agent operating at location L2, have no relevance to a space service operable to store and retrieve documents to the space for processes in the distributed computing environment. Buckle does not mention any space service and does not describe any of this agents or devices as operable to store and retrieve documents to a space for processes in the distributed computing environment.

Furthermore, the Examiner argues both that Buckle does teach a space service and also argues that Buckle does not teach such a service (See, Office Action, page 12, lines 1-2 and page 13, lines 7-9). The Examiner cannot have it both ways. It is clearly improper to rely on two conflicting interpretations of the prior art.

The Examiner admits that Buckle fails to teach or suggest converting a current computation state of a process into a data representation language representation of the current computation state. Instead, Buckle teaches that the actual byte code of an agent, which is not a data representation language representation, is sent to another location as the content parameter of an ACL message. The Examiner relies upon Wolff, citing column 2, lines 1-10, column 3, lines 25-45, column 4, lines 25-35, column 5, lines 1-8, and column 6, lines 1-5. The first cited passage (column 2, lines 1-10) generally describes how IP address and URL names are used with the Internet. The other cited passages describe various aspects of how Wolff's agent cards work. Wolff teaches a system wherein agent cards may be

However, the Examiner's suggested combination of Buckle and Wolff is improper. Wolff's agent cards do not suggest modifying Buckle's CORBA-based agent mobility system. Wolff teaches that agent cards maintain state for their functionality, but can be moved from agency unit to agency unit (Wolff, column 3, lines 6-7). In other words, Wolff's system requires physically moving agent cards from one agency unit to another. Buckle, on the other hand, teaches that binary agent code may be sent from one location to another via ACL messages. Wolff's system does not involve, nor is Wolff concerned with transferring state information for a process from one device to another, but instead involves allowing devices, that may contain state information from one physical location to another physical location, i.e. from one of Wolff's agency unit to another. Thus, no state information on Wolff's agent card is transferred to another location, as the binary agent code in Buckle's system.

Also, Buckle' system requires various mechanisms provided by the CORBA platform. Modifying Buckle to use a representation of the an agent would prevent Buckle's system from being able to use the CORBA platform's externalization service (see, page 38, line 28 – page 39, line 4) on which Buckle relies in order to convert an object into a byte stream and one which Buckle also relies on for re-constructing the byte stream back into an object (before storing the reconstituted agent code at location L2. Thus, modifying Buckle in view of Wolff, as suggested by the Examiner, would change the basic principle of Buckle's system.

Please also see arguments above regarding the rejections of claims 1 and 19.

The Examiner admits that Buckle in view of Wolff, fails to teach or suggest a space service operable to store and retrieve documents to the space for processes in the distributed computing environment (however, as noted above, the Examiner also argues that Buckle does teach such a space service). The Examiner proposes modifying the combination of Buckle and Wolf, which Applicants' maintain is improper, with the teachings of Matsumoto. Matsumoto teaches a method for arranging commercial advertisements on a network for a potential media owner or affiliate to sell ad space on a

network. In Matsumoto's system, an advertiser's advertisement is placed on an affiliate's web site and the number of user responses to the advertisement is used to determine payment for the ad space. Matsumoto's system for providing commercial advertisements has nothing to do with either Buckle or Wolff's teachings, either separately or in combination. Matsumoto is not concerned with mobile agents and is also not concerned with a space service operable to store and retrieve documents to a space for processes in a distributed computing environment. Matsumoto's system only allows web-based advertisements to be installed on a web page. The Examiner fails to cite any passage of Matsumoto, and Matsumoto fails to mention, anything regarding such a space service.

The Examiner cites column 6, lines 55-65 and column 7, lines 5-10 and 50-60 of Matsumoto. The first cited passage refers to an offer web page and an information web page that provide information usable to allow an affiliate to decide where to place an advertisement. The second cited passage describes a confirmation notice that includes information regarding the place of an advertisement on a web page in Matsumoto's system. The third cited passage describes an arrangement module that allocates the actual space for the ad. None of the cited passages have anything to do with a space service operable to store and retrieve documents to a space for processes in the distributed computing environment. Matsumoto's ad space is not a space to which documents are stored and retrieved by processes in a distributed computing environment. Instead, Matsumoto's ad space is merely a web page where commercial advertisements are place for a fee.

Therefore, the rejection of claim 27 is not supported by the teachings of the cited art and withdrawal thereof is respectfully requested.

In regard to claim 41, similar arguments regarding Buckle and Wolff, as discussed above for claim 1, apply to the rejection of claim 41 with equal force. Furthermore, contrary to the Examiner's assertion, the cited art does not teach or suggest generating an advertisement for the stored data representation language representation, wherein the advertisement comprises information to enable access to the stored data representation

language representation.

The Examiner cites column 6, lines 25-35 and column 7, lines 50 –60 of Matsumoto. However, these portions of Matsumoto only describe commercial advertisements placed on web pages and have no relevance to an advertisement for a stored data representation language representation. Nowhere does Matsumoto mention anything regarding an advertisement for a stored data representation language representation of a current computation state of a process. Matsumoto is only concerned with commercial advertisements – not advertisements for representations of current computation states of processes. Additionally, Matsumoto does not teach or suggest anything about an advertisement that comprises information to enable access to a stored data representation language representation. The Examiner cites column 6, line 50 – column 7, line 20, where Matsumoto describes how an affiliate and an advertiser negotiate for placing a commercial advertisement on a web page. However, the cited passage has no relevance to an advertisement comprising information to enable access to a stored data representation language representation of a current computation state of a process. Additionally, Matsumoto's ads do not include information to enable access to a stored data representation language representation of a current computation state.

Therefore, the rejection of claim 41 is not supported by the teachings of the cited art and withdrawal thereof is respectfully requested.

The Office Action rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Buckle in view of Wolff and further in view of Jagannathan (U.S. Patent 6,496,871),

The Office Action rejected claim 34 under 35 U.S.C. § 103(a) as being unpatentable over Buckle in view of Wolff, and further in view of Matsumoto and Jagannathan,

The Office Action rejected claims 12, 22-23, 35, 47 and 64 under 35 U.S.C. § 103(a) as being unpatentable over Buckle in view of Wolff and further view of Edward "Core Jini" pages 4-5-410 (hereinafter "Edward").

Applicants also assert that the rejections of numerous ones of the dependent claims are further unsupported by the cited art. However, since the rejections of each of the independent claims have been shown to be improper, a further discussion of the rejections of the dependent claims is not necessary at this time.

Allowable Subject Matter:

Claims 9, 15, 42, 43 and 57 were objected to as being dependent upon a rejected base claim but otherwise allowable if rewritten in independent form. Applicants have amended claims 9, 12, 42, 47, 57 and 64 to take advantage of the allowable matter indicated by the Examiner.

Specifically, claim 9 has been amended and written in independent form based on the allowable matter of claim 9. The pertinent limitations form claims 5 and 8 have been included in claim 9. Claim 23 has been amended and written in independent form to recite limitations similar to the limitations of claim 15, deemed allowable by the Examiner. Claim 42, has been rewritten in independent form and recites limitation similar to amended claim 9. Claim 47 has been amended and written in independent form to recite limitations similar to the limitations of claim 15, deemed allowable by the Examiner. Claim 57 has been amended and written in independent form based on the allowable matter of claim 57. Claim 64 has been amended and written in independent form to recite limitations similar to the limitations of claim 15, deemed allowable by the Examiner.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-47200/RCK.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Notice of Change of Address

☐ Fee Authorization Form authorizing a deposit account debit in the amount of $ for fees ( ).

☐ Other:

Respectfully submitted,

Robert C. Kowert
Reg. No. 39,255
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8850

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